United States Department of Agriculture **Forest Service**

NA

File Code: 3460 Date: October 26, 2000
Route To:

Subject: Updated Assessment of Black Cherry Health, Allegheny National Forest - 2000

To: Forest Supervisor Allegheny NF

The health of the black cherry resource on the Allegheny NF had been assessed during 1997 in stands severely defoliated by the cherry scallopshell moth a few years earlier. In late August 2000, another assessment was conducted to determine if changes in black cherry health had occurred since 1997. This memo contains our findings and recommendations.

The stands in which we conducted the assessment were representative of those defoliated most severely by cherry scallop shell moth infestations from 1993 through 1995. We reported our findings from the 1997 assessment to you in our 3460 memo dated June 26, 1998. The current memo provides an update on the health of black cherry resource on the Allegheny NF in 2000 and compares these results with our earlier findings.

Stands with a disturbance history of two and three years of moderate to severe cherry scallop shell moth defoliation were selected to describe how the black cherry health had changed in stands with the most frequent and severest of the disturbances. One stand also experienced a hailstorm in the spring preceding the insect defoliation. Surveys were not conducted in stands with fewer or less severe disturbances because it was assumed that these intensities of defoliation would have much reduced consequences on black cherry health.

The current results, as in our earlier survey, did not find any major decline or mortality of the black cherry resource on the Allegheny NF associated with the cherry scallop shell moth infestation. Most of the black cherry resource (84% in 1997 and 89% in 2000) was healthy or showed only light decline in crown vigor. Thus, there was a 5% increase in trees in these healthiest classes from 1997 to 2000. Furthermore, there was a major improvement during this period even in the health of black cherry trees in the poorest vigor classes. Trees in the combined moderate and severe crown vigor classes dropped from 11% to 5%. However, dead trees increased slightly from 3% to 5%, because of windthrow, breakage or lightning strikes.

While the findings in the previous paragraph apply to an average condition, the black cherry health in specific stands differs to a lesser or greater degree as to the proportion of black cherry trees dead or in the lowest vigor classes. Refer to the attached tabulation for a summary of the black cherry crown vigor class ratings for each of the six stands surveyed at the end of 2000 growing season.

Beaver Meadows, the least healthy stand, had dead trees increase from 1997 (9%) to 2000 (11%), as live trees in the lowest vigor classes died. Slater Run, another unhealthy stand, also had an increase in dead trees from 1997 (6%) to 2000 (8%), but more trees could die in the future because another 9% of the live trees are in the lowest vigor classes. By contrast, all of the other stands surveyed were healthier. The Salmon Creek stand had a single dead tree, and only 2% of

the trees were in the lowest vigor classes. The other stands have no more than 4% of their trees dead and no more than 5% of their trees with low vigor.

The stand at Vandergriff Corners improved the most in the last three years. In 1997, nearly a third of the black cherry in this stand was of low vigor. By this year, the low vigor trees had dropped to 4%. This recovery in crown vigor may be due to the large, open crowns of many trees in this stand as a result of thinning done around the time of the cherry scallopshell moth infestation. By comparison, the Beaver Meadows and Slater Run stands, with many trees in the lowest vigor classes, were not thinned. As a result, the black cherry trees in these two stands tend to have smaller, partially shaded crowns.

In summary, most of the black cherry resource on the Allegheny NF we surveyed was healthy or showed only light decline in crown vigor. However, there was variation in the health of the black cherry resource. Certain stands had more declining and dead trees than others. Compared to the average condition, a majority of the dead trees and/or a large proportion of trees in the poorest vigor classes were concentrated in a few stands. There was an apparent improvement in the health of residual black cherry trees with the lowest vigor in thinned stands compared with trees of similar vigor in unthinned stands.

Forest stands with concentrations of black cherry trees in the lowest vigor classes may present opportunities for sanitation or pre-salvage harvesting. This action would prevent the unacceptable loss of black cherry growing stock and increase overall stand health by promoting the development of larger crowns.

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Attachment

cc: Bradford RD
Marienville RD
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REA/REA/blm

ALLEGHENY NF BLACK CHERRY HEALTH ASSESSMENT
COMPARISON OF CONDITIONS IN 1997 AND 2000

Summary of Black Cherry Vigor Classes for each Stand Surveyed
Vigor Classes based on Crown Decline from Branch Mortality Breakage/Dieback/Discoloration
Vigor Classes: 1 = Healthy; 2 = Light; 3 = Moderate; 4 = Severe; 5 = Dead

Marienville RD, Salmon Creek (Stand M01) - Two Years of CSSM Defoliation

1997 Vigor Class	Number of Trees	Percent of	2000 Vigor Trees	Number of Trees	Percent of Total
1	74	76	1	66	67
2	19	19	2	52	30
3	4	4	3	1	1
4	1	1	4	1	1
5	0	0	5	1	1
Totals	98	100	Totals	98	100

Marienville RD, Slater Run (Stand MO2) - Two Years of CSSM Defoliation

1997 Vigor Class	Number of Trees	Percent of Total	2000 Vigor Trees	Number of Trees	Percent of Total
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1	101	69	1	89	61
2	27	18	2	33	22
3	7	5	3	11	8
4	3	2	4	1	1
5	8	6	5	12	8
Totals	146	100	Totals	146	100

Marienville RD, Beaver Meadows (Stand M03) - Three Years of CSSM Defoliation

1997 Vigor Class	Number of Trees	Percent of Total	2000 Vigor Trees	Number of Trees	Percent of Total
1	87	60	1	101	72
2	26	19	2	17	12
:	9	6	3	6	4
4	8	6		1	1
5	12	9	5	16	11
Totals	141	100	Totals	141	100

ALLEGHENY NF BLACK CHERRY HEALTH ASSESSMENT
COMPARISON OF CONDITIONS IN 1997 AND 2000
(continued)

Summary of Black Cherry Vigor Classes for each Stand Surveyed
Vigor Classes based on Crown Decline from Branch Mortality/Breakage/Dieback/Discoloration
Vigor Classes: 1 = Healthy; 2 = Light; 3 = Moderate; 4 = Severe; 5 = Dead

Marienville RD, Buzzard Swamp (Stand M04) - Three Years of CSSM Defoliation					
1997 Vigor Class	Number of Trees	Percent of Total	2000 Vigor Trees	Number of Trees	Percent of Total
1	95	69		93	68
2	27	20	2	31	23
3	10	7	_	6	4
4	0	0		2	1
5	5	4	5	5	4
Totals	137	100	Totals	137	100

Marienville RD, Raven Run (Stand M05) - Three Years of CSSM Defoliation					
1997 Vigor Class	Number of Trees	Percent of Total	2000 Vigor Trees	Number of Trees	Percent of Total
l	47	56	1	64	76
2	25	30	2 _	15	18
3	8	10	3	2	2
4	3	3	4	1	2
5	1	1	5	2	2
Totals	84	100	Totals	84	100

Bradford RD, Vandergriff Corners (Stand 501) - Two Years of CSSM Defoliation & Hail Storm					
1997 Vigor Class	Number of Trees	Percent of Total	2000 Vigor Trees	Number of Trees	Percent of Total
1	41	49		52	63
2	18	22		27	32
3	19	23	3	3	4
4	5	6	4	0	0
5	0	0	5	1	1
Totals	83	100	Totals	83	100